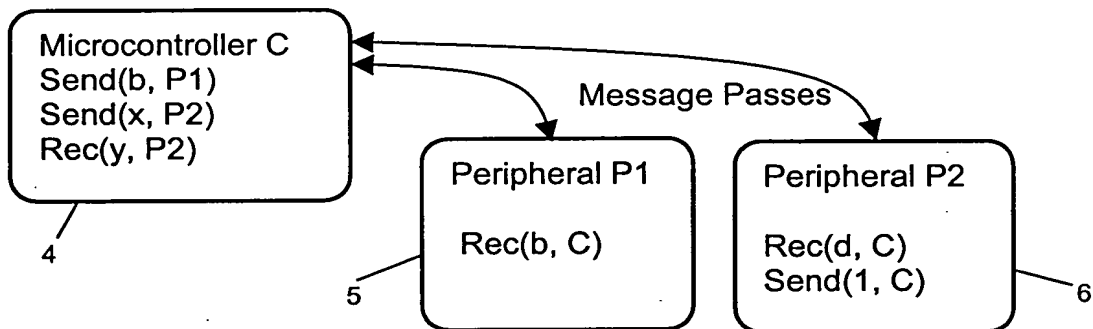
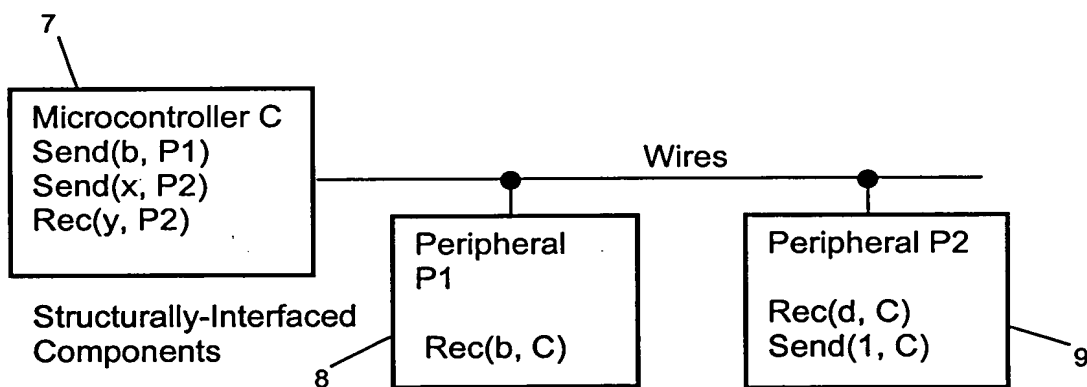


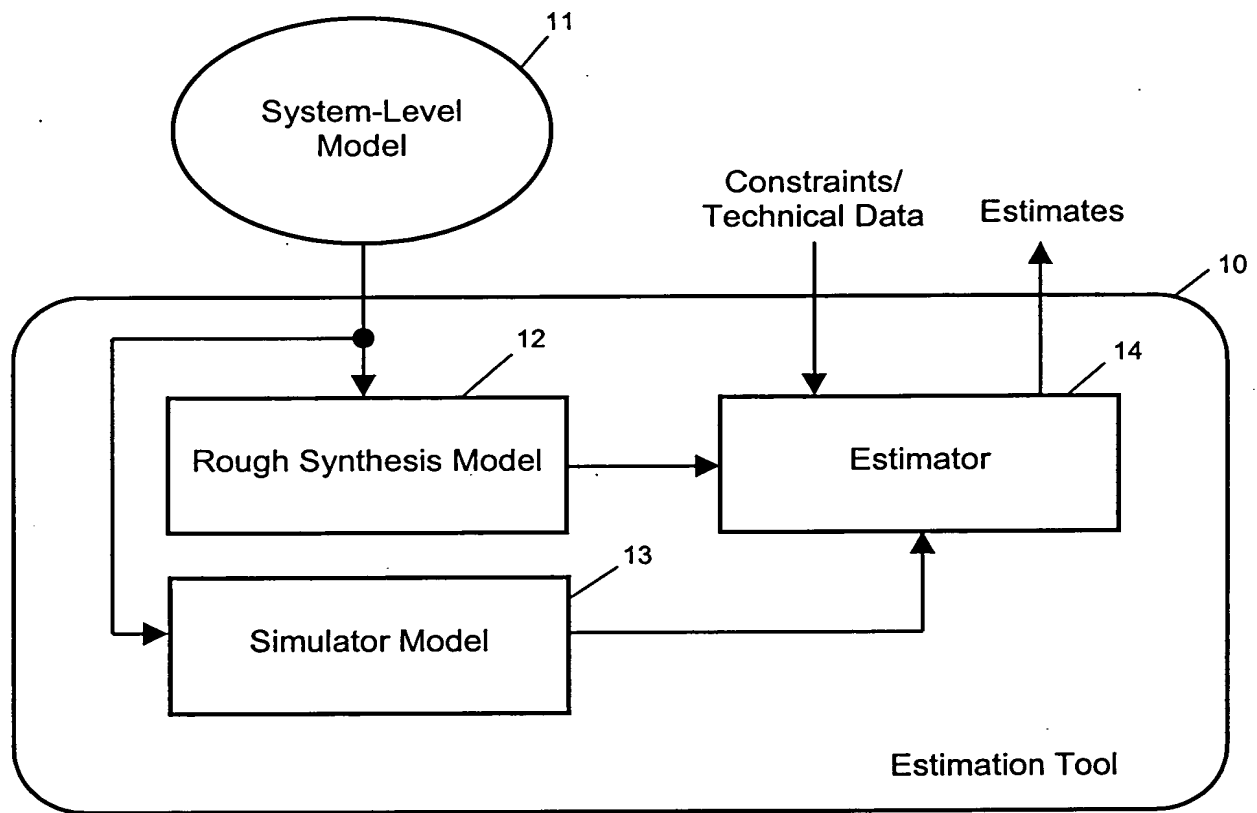
**FIG. 1A**  
**PRIOR ART**



**FIG. 1B**  
**PRIOR ART**



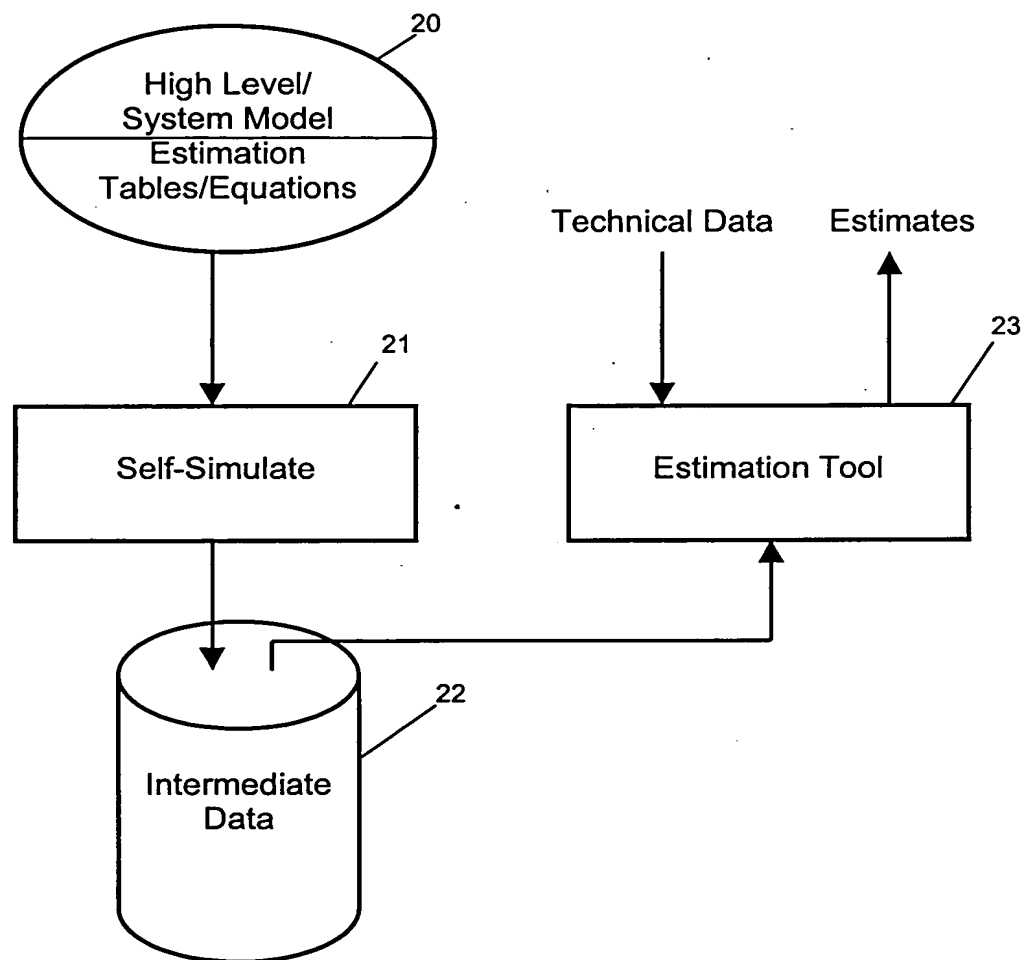
**FIG. 1C**  
**PRIOR ART**



**FIG. 2**  
**PRIOR ART**

Buffer Size (bytes)	Area (transistors)	Toggle-Count
2	4552	203
4	7360	232
8	1576	238
16	22600	249

**FIG. 3**



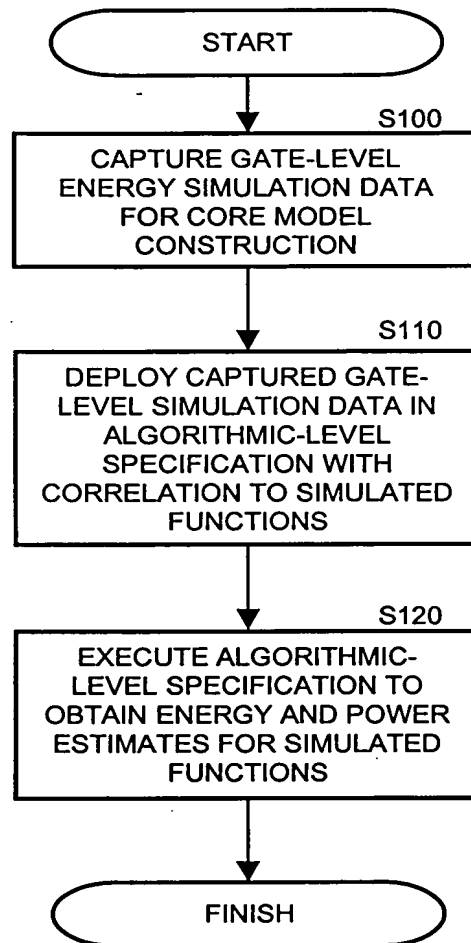
**FIG. 4**

```

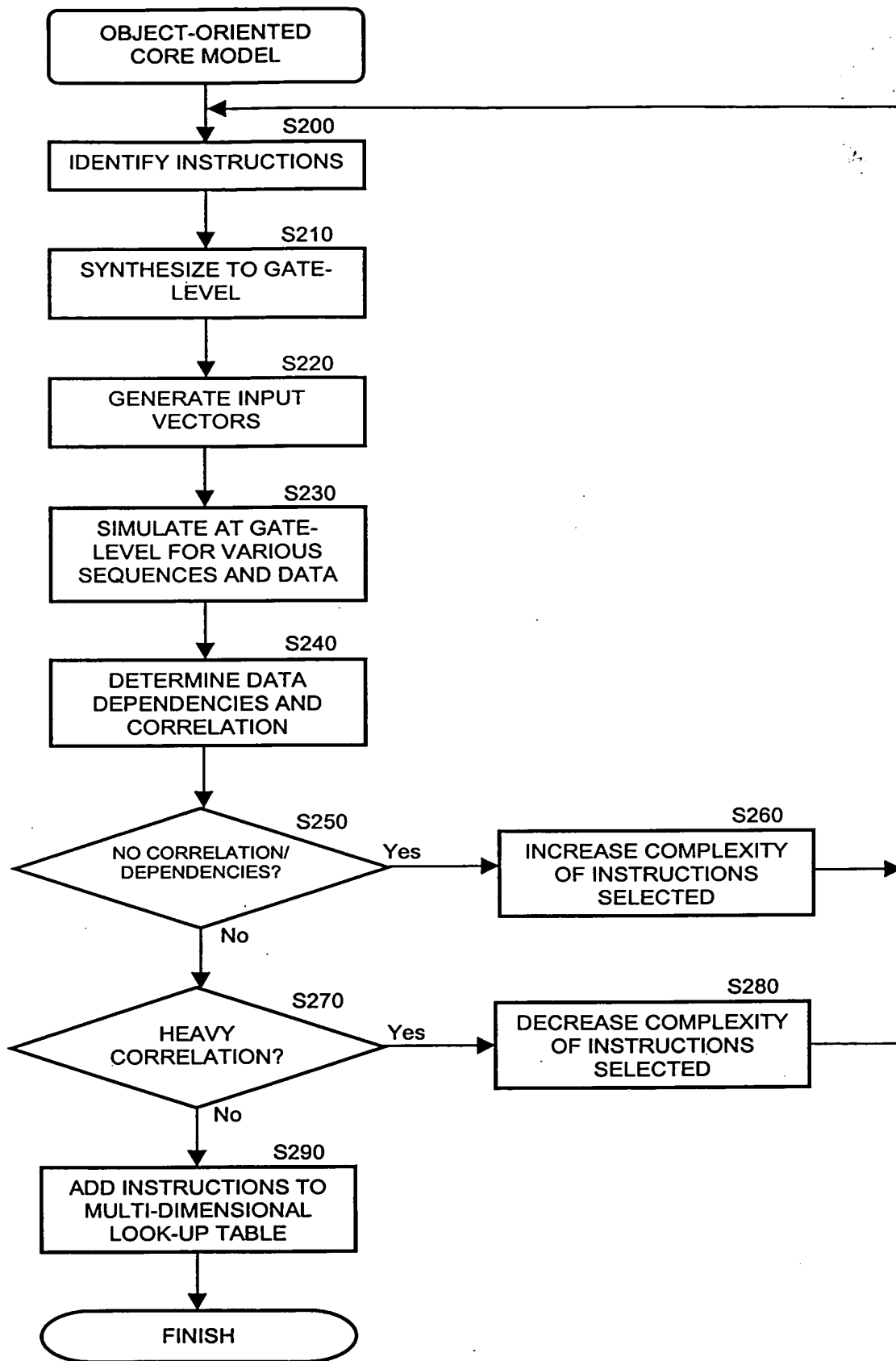
class UART {
    unsigned toggle_count = 0;
    public Reset() {
        data_txbuf = 0, data_rxbuf = 0;
        toggle_count += TOGGLE_TABLE[RESET];
    }
    public EnableTx() {
        for( int i = 0; i < 8; i++ )
            s_out = (data_txbuf >> i) & 0x01;
        toggle_count += TOGGLE_TABLE[ENABLETX];
    }
    public WriteTxBuf(unsigned char x) {
        data_txbuf = x;
        toggle_count += TOGGLE_TABLE[WRITEBUF];
    }
    public ReadRxBuf(unsigned & x) {
        // implementation of reading character from buffer
        toggle_count += TOGGLE_TABLE[READBUF];
    }
};

```

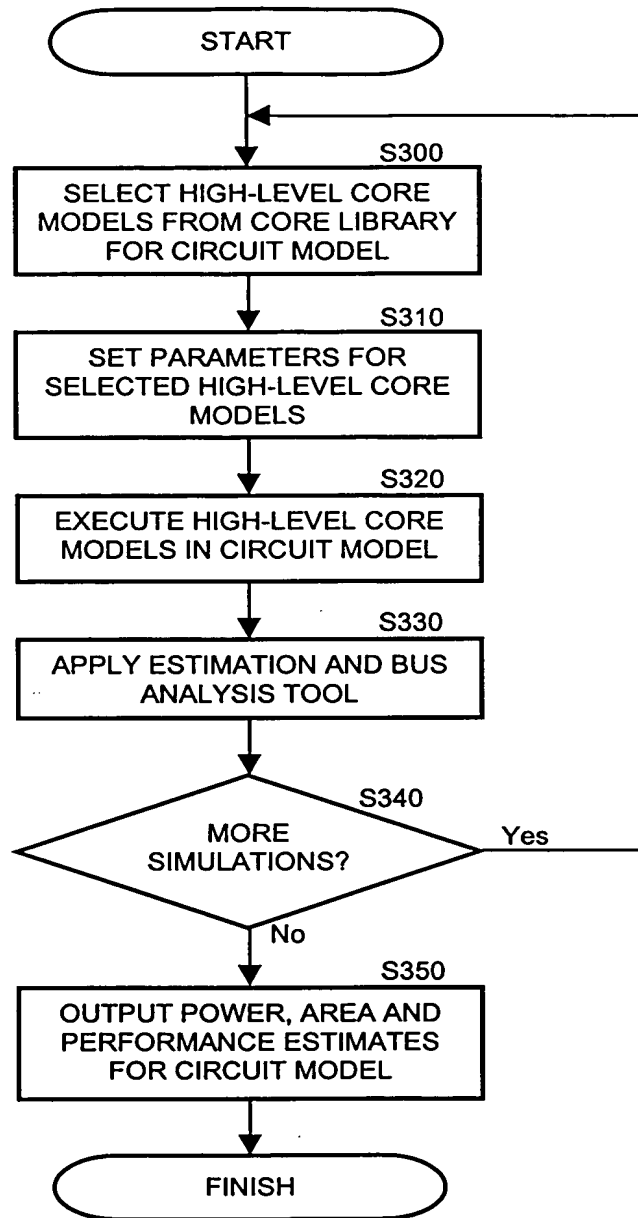
**FIG. 5**



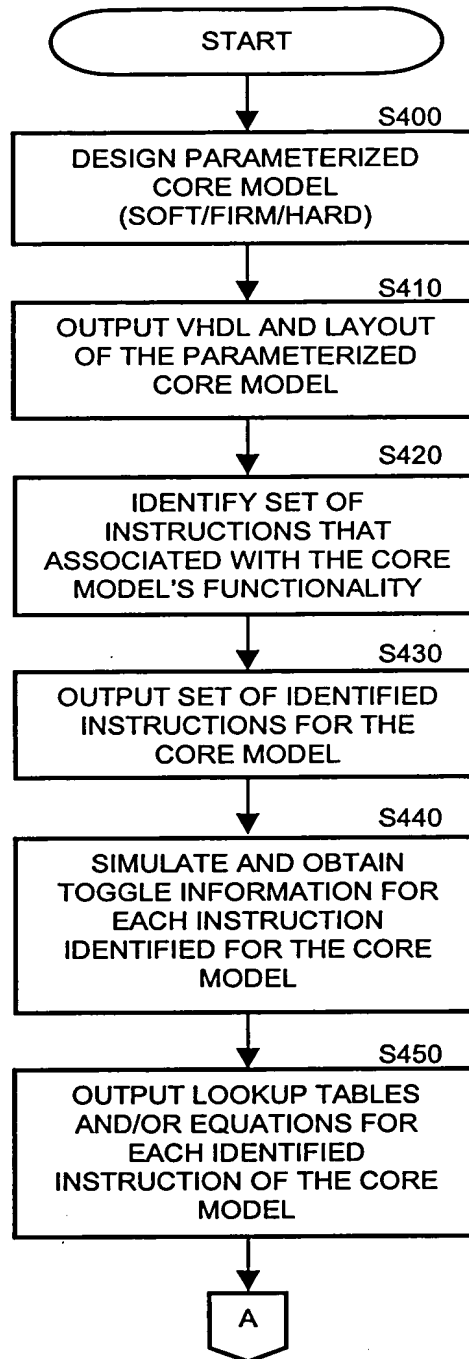
**FIG. 6**



**FIG. 7**

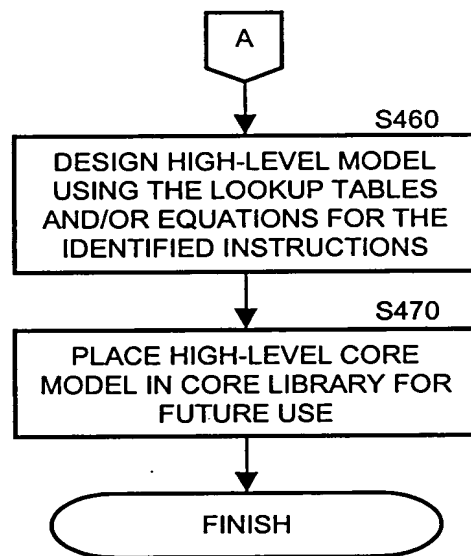


**FIG. 8**

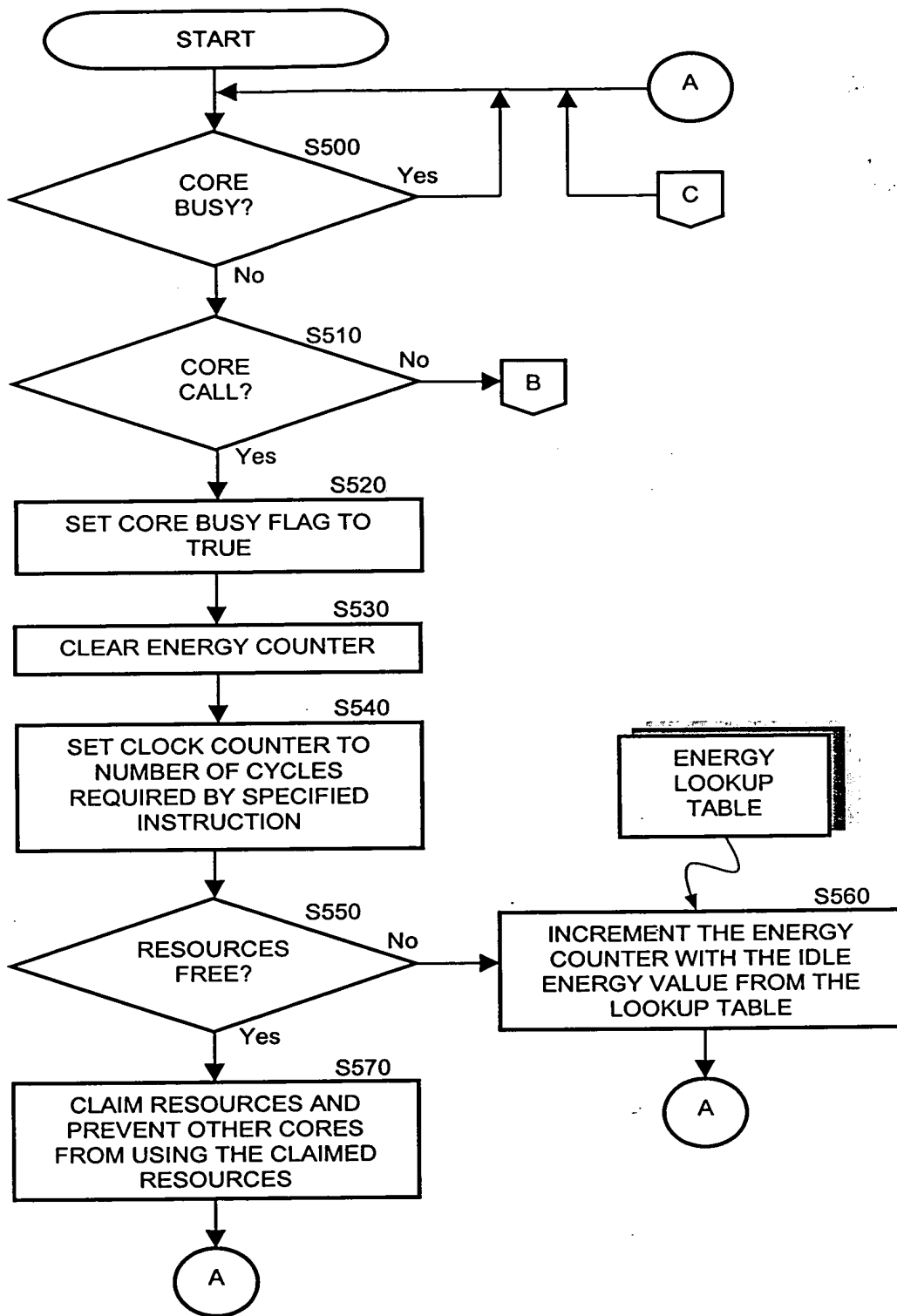


**FIG. 9A**

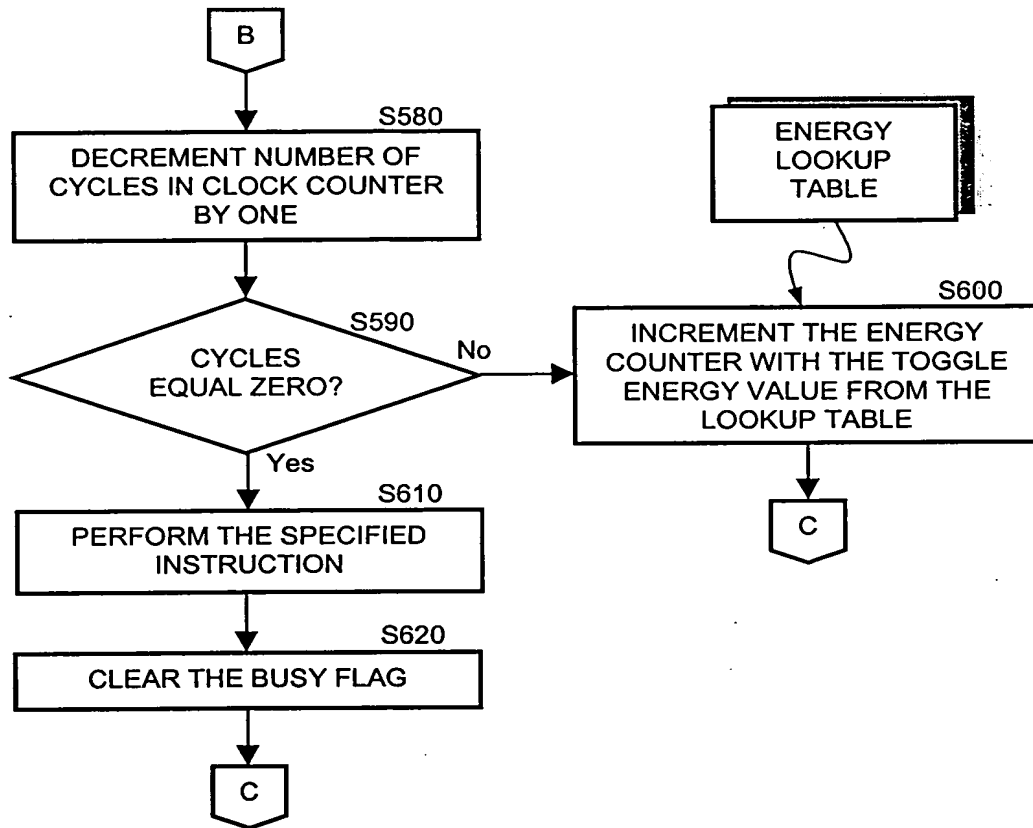




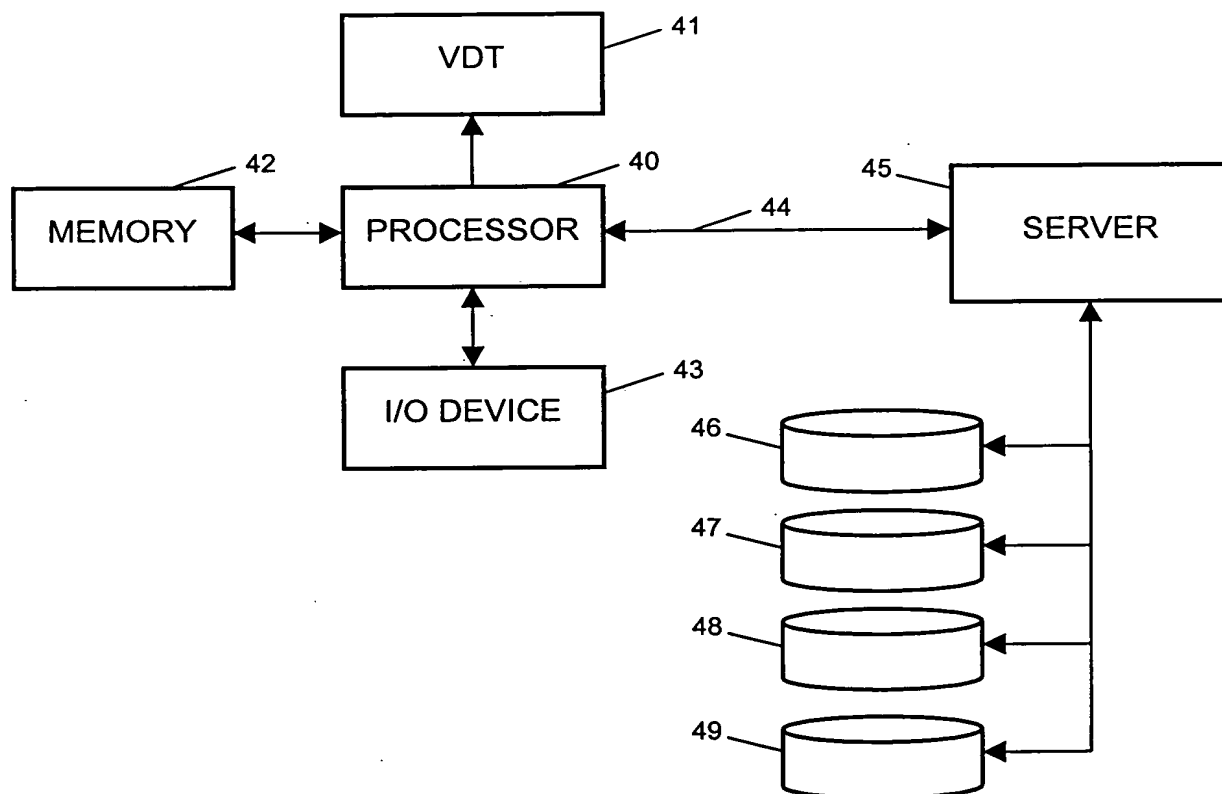
**FIG. 9B**



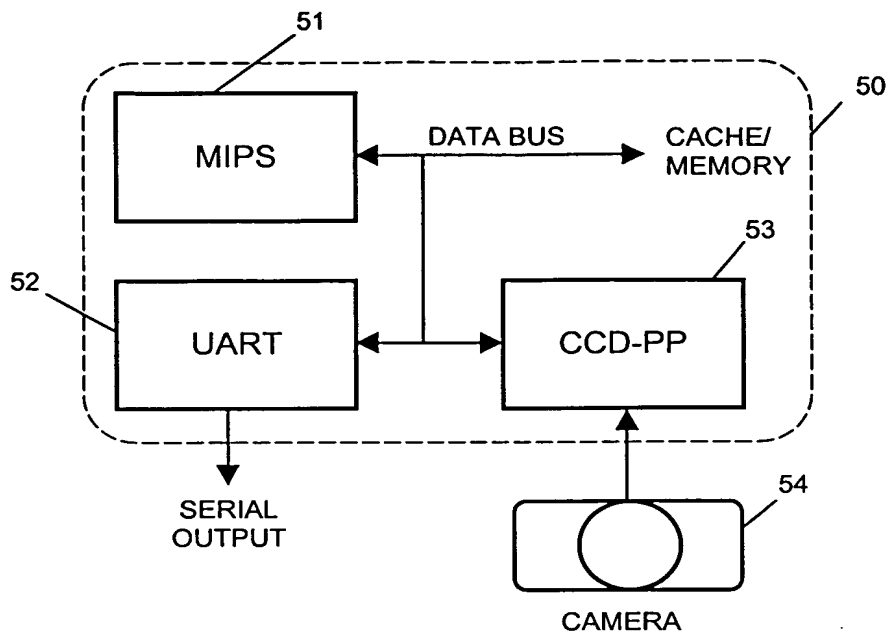
**FIG. 10A**



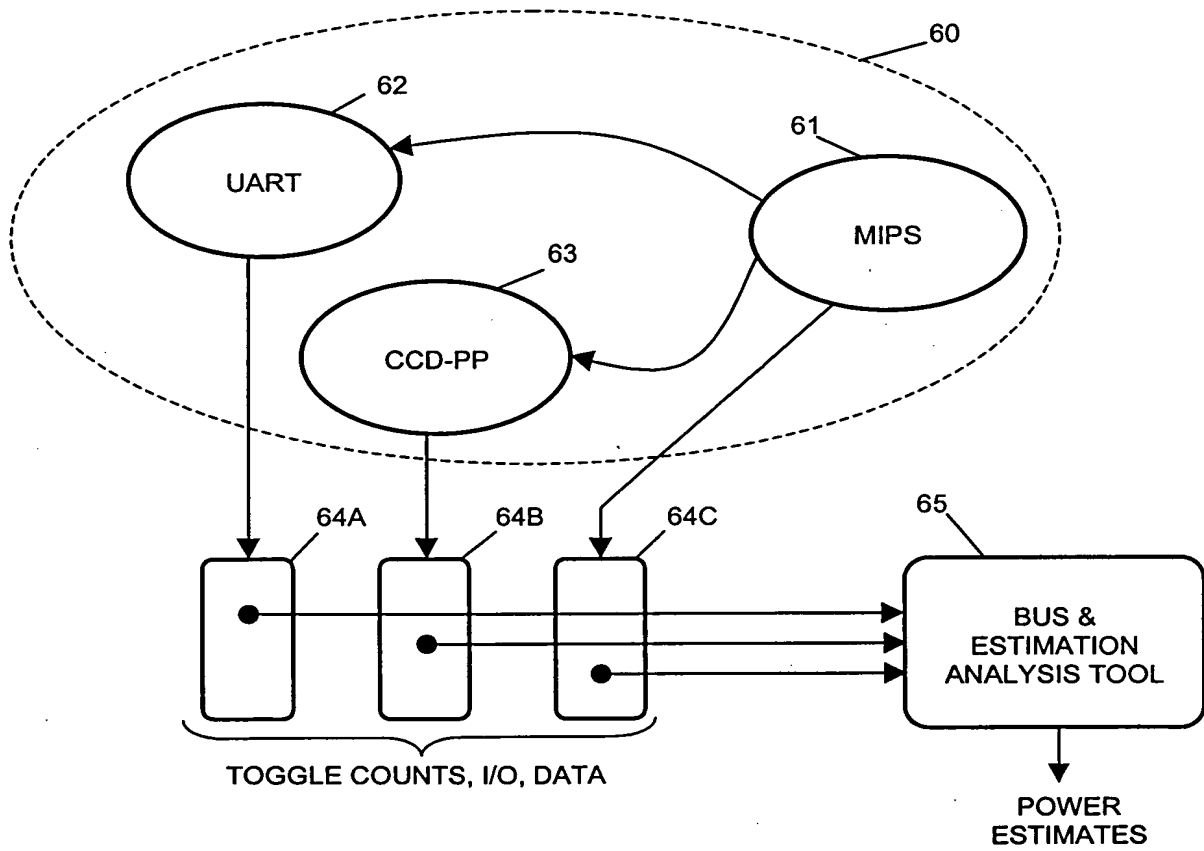
**FIG. 10B**



**FIG. 11**



**FIG. 12**



**FIG. 13**